

 **GARLAND™**  
**GAS RESTAURANT RANGES**  
**G280, G30A**



**FOR YOUR SAFETY**  
**DO NOT STORE OR USE GASOLINE**  
**OR OTHER FLAMMABLE VAPORS AND**  
**LIQUIDS IN THE VICINITY OF THIS OR**  
**ANY OTHER APPLIANCE.**



PLEASE READ ALL SECTIONS OF THIS MANUAL

THIS PRODUCT HAS BEEN CERTIFIED AS COMMERCIAL COOKING EQUIPMENT AND MUST BE INSTALLED BY PROFESSIONAL PERSONNEL AS SPECIFIED.

WE SUGGEST INSTALLATION, MAINTENANCE AND REPAIRS SHOULD BE PERFORMED BY YOUR LOCAL MAINTENANCE AND REPAIR CENTER, LISTED IN YOUR INFORMATION PACKET.

In the event you have any questions concerning the installation, use, care or service of the product, write our Customer Service Department.

**NOTE:** Unit must be installed with no less than 6" clearance from Combustible construction at rear and sides.

**FOR YOUR SAFETY:** Post in a prominent location, instructions to be followed in the event the user smells gas. This information shall be obtained by consulting your local gas supplier.

Continuous product improvement is a Garland policy, therefore specifications and design are subject to change without notice.

 **GARLAND™** Garland Commercial Industries, Inc.  
Freeland, Pennsylvania 18224

Phone (717) 636-1000  
FAX: (717) 636-3903

CONGRATULATIONS!

NOTES

You have just purchased the finest commercial cooking equipment available anywhere. Like any fine, precision built piece of equipment, it should be given regular care and maintenance. Periodical inspections by your dealer or a qualified service agent are recommended. When corresponding with the factory or your local authorized service agency regarding service or parts, be sure to refer to the particular unit by the correct model number (including prefix and suffix letters and numbers) and the serial or code number. The rating plate affixed to the unit contains this information.

**\*\*REGULAR MAINTENANCE ENSURES PEAK PERFORMANCE.\*\***

**TABLE OF CONTENTS**

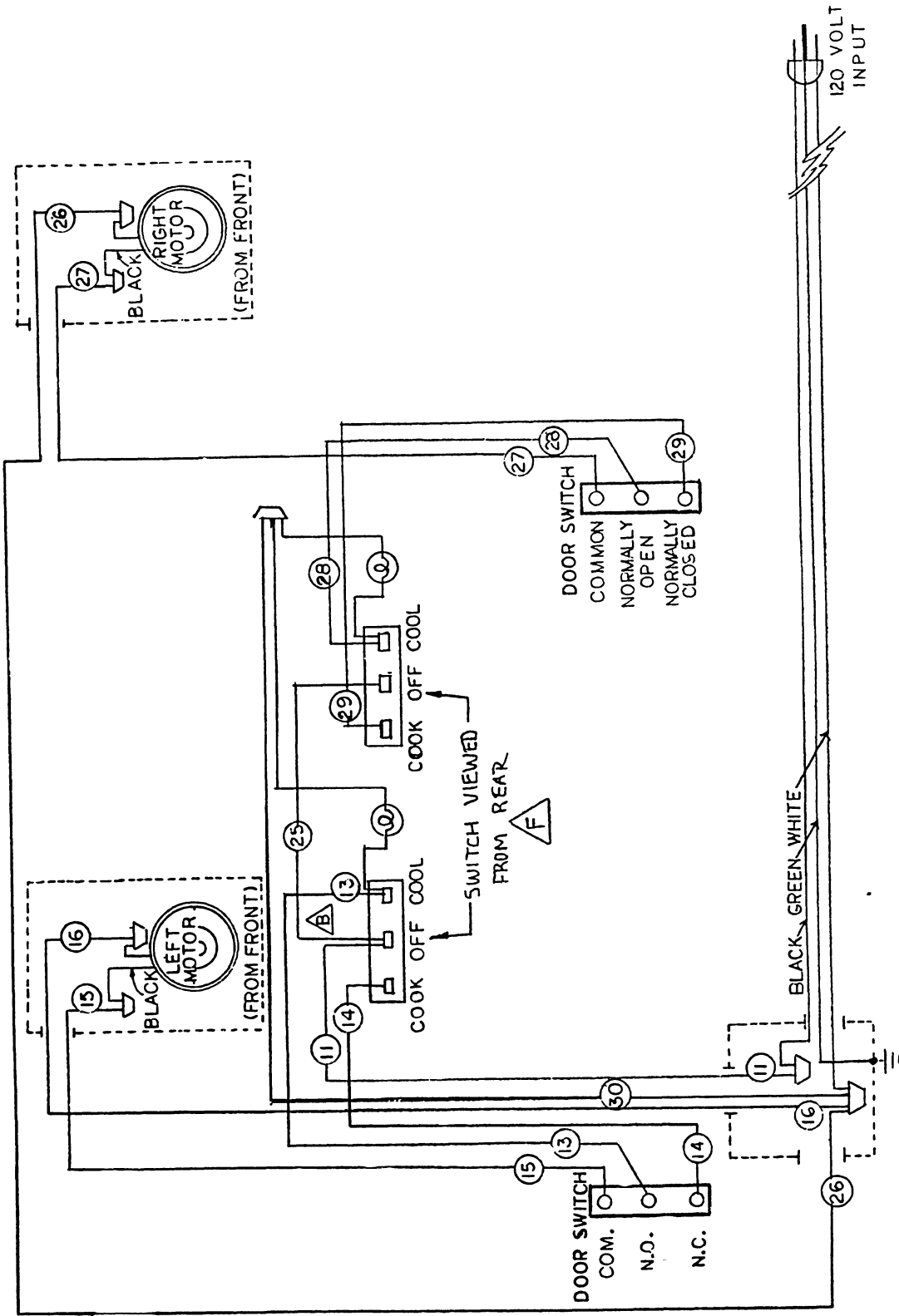
GAS INPUT INFORMATION.....	2
INSTALLATION.....	3
INSTALLATION OF RANGES EQUIPPED WITH CASTERS.....	4
TESTING AND ADJUSTMENTS.....	5
OPERATION.....	6
PRODUCT APPLICATION INFORMATION.....	9
PROBLEMS/SOLUTIONS.....	12
MAINTENANCE.....	13
ADJUSTMENTS.....	16
INSTRUCTIONS FOR FDO.....	18
INSTRUCTION FOR GRIDDLE CONTROL.....	20
TROUBLE-SHOOTING GUIDE.....	22
USER PARTS LIST.....	23
WIRING DIAGRAMS.....	24

**THIS PRODUCT HAS BEEN CERTIFIED AS COMMERCIAL COOKING EQUIPMENT AND MUST BE INSTALLED, MAINTAINED, REPAIRED AND OPERATED BY PROFESSIONAL PERSONNEL AS SPECIFIED.**

**FACTORY SPECIFIED REPLACEMENT PARTS MUST BE USED TO MAINTAIN CERTIFICATION. USE OF "GENERIC" REPLACEMENT PARTS MAY CREATE A HAZARD AND VOID CERTIFICATION.**

RIGHT OVEN SECTION (RC)

LEFT OVEN SECTION (RC)



Model Number	Gas Input	Electrical Rating		
G280 Series	B.T.U.'s/HR 35,000 Per Oven	Volts	Amps	Phase
		120	6.8	Single

GAS INPUT INFORMATION

BASIC MODEL NUMBER	TOTAL B.T.U./HR.
G28	105,000
G28S	80,000
G30A	85,000
G30A-T	50,000
G286/G286RC	155,000
G286S	120,000
G288	210,000
G288S	195,000
G284/G284RC/G284RC2	270,000
G287/G287RC	235,000
G282/G282RC	198,500
G283/G283RC/G283RC2	233,500
G281	187,000
G285	222,000
G289/G289RC/G289RC2	310,000
G289S/G289SRC	275,000

BURNER TYPES	B.T.U./HR.
OVEN - Standard or RC (24")	35,000
OVEN - (20")	25,000
OPEN BURNER	20,000
OPEN BURNER - G30-A	12,500
HOT TOP (in lieu of 2 open burners)	18,000
GRIDDLE (in lieu of 2 open burners)	18,000

**INSTALLATION**

Before assembly and connection check gas supply.

- A. The type of gas for which the unit is equipped is stamped on the data plate located behind lower front panel. Connect a unit stamped "NAT" only to natural gas; connect those stamped "PRO" only to propane.
- B. If it is a new installation: have the gas authorities check meter size and piping to assure that the unit is supplied with sufficient amount of gas pressure required to operate the unit.
- C. If it is an addition or replacement equipment: have gas authorities check pressure to make certain that existing meter and piping will supply fuel at the unit with not more than 1/2" water column pressure drop.
- D. Before turning on main gas supply, unit must be checked to ensure all valves are in the off position.

**NOTE:** When checking pressure be sure that all other equipment on the same gas line is on. A pressure regulator is supplied with GARLAND Restaurant Series Equipment. Set regulator to deliver gas at pressure shown on rating plate. Installation must conform with the National Fuel Gas Code ANSI Z 223.1-Latest Edition/NFPA No.54-Latest Edition and/or local code to assure safe and efficient operation.

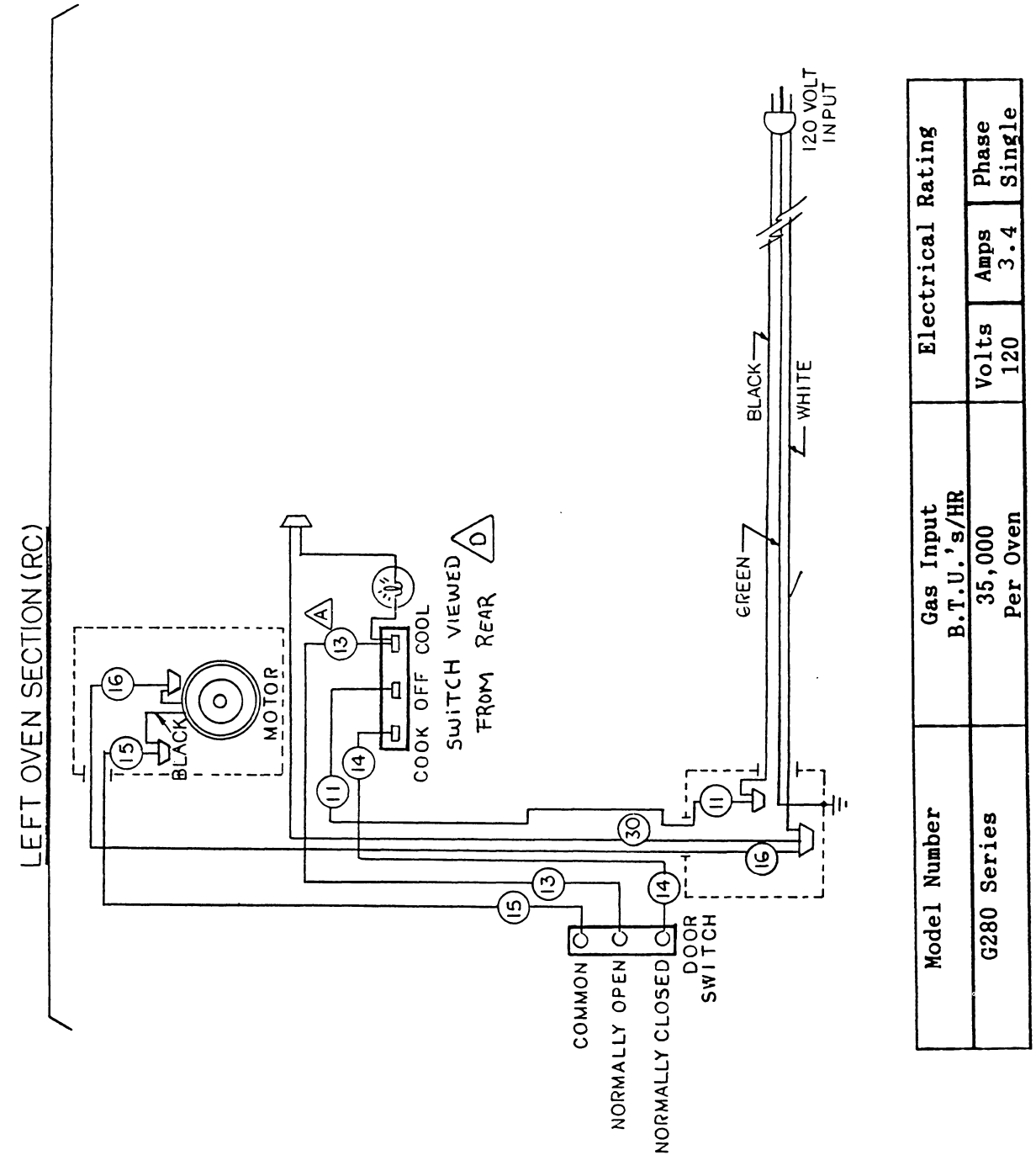
**NOTE:** The appliance and its individual shut-off (supplied by others) must be disconnected from the gas supply piping system during any pressure testing of that system at pressures in excess of 1/2 PGIG (3.45 KP2).

The appliance must be isolated from the gas supply piping by closing its individual manual shut-off (supplied by others) during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 PSIG (3.45 KP2).

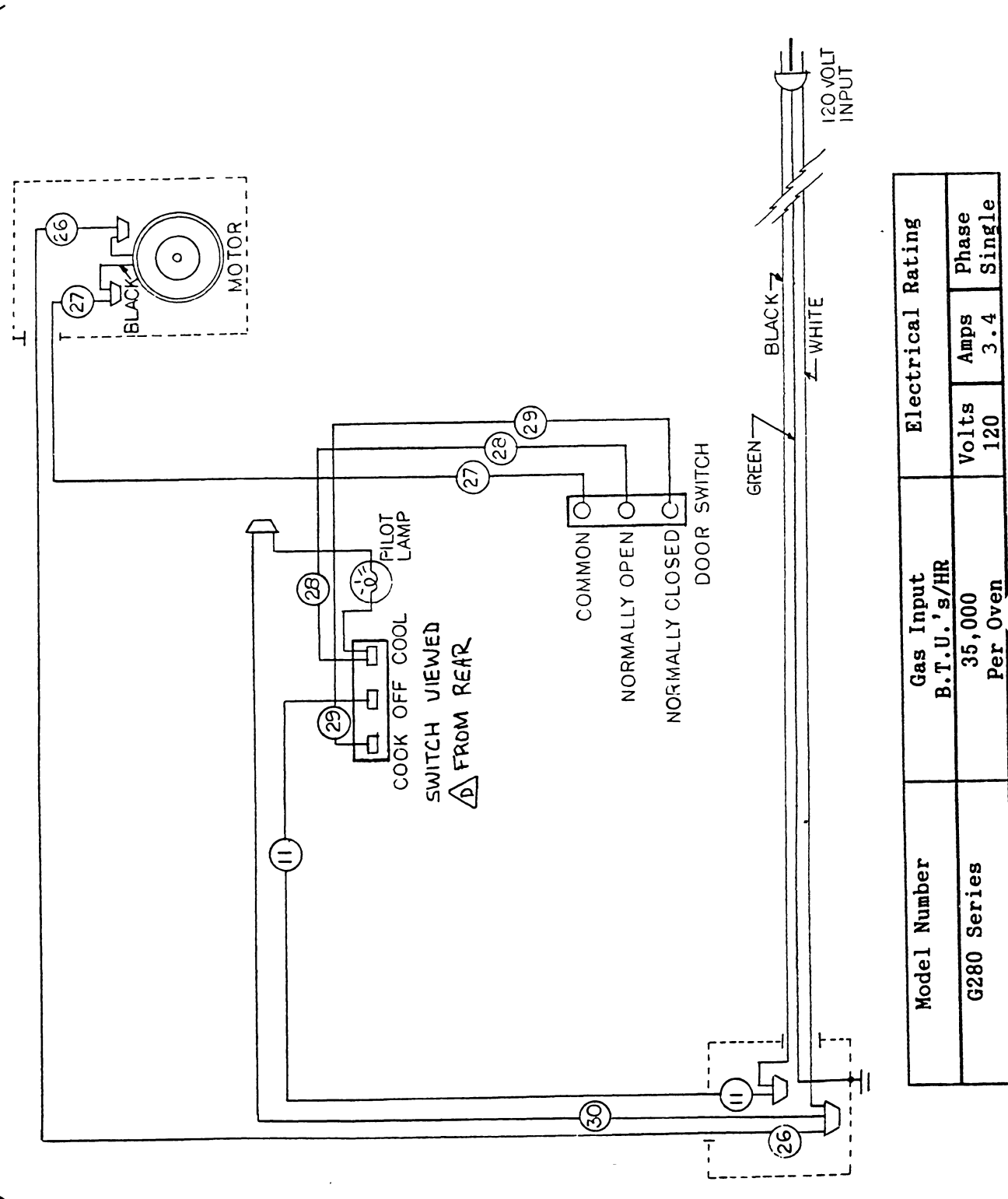
**NOTE:** Adequate clearance must be provided for servicing and proper operation.

**INSTALLATION OF RANGES EQUIPPED WITH CASTERS**

- A. The installation shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z 21.69-Latest Edition and a quick disconnect device that complies with the Standard for Quick Disconnect Devices for Use with Gas Fuel, ANSI Z 21.41-Latest Edition.
- B. The front casters of the unit are equipped with brakes to limit the movement of the oven without depending on the connector and any quick disconnect device or its associated piping to limit the appliance movement.
- C. Please be aware there is a restraint on the unit and if disconnection of the restraint is necessary, be sure to reconnect the restraint after the oven has been returned to its originally installed position.



Model Number G280 Series	Gas Input B.T.U.'s/HR 35,000 Per Oven	Electrical Rating	
		Volts 120	Amps 3.4 Phase Single



Model Number	Gas Input B.T.U.'s/HR Per Oven	Electrical Rating
G280 Series	35,000	Volts 120 Amps 3.4 Phase Single

LEGS

Raise front of unit and block. Do not lay unit on its back. Position leg insert into leg retainer opening and tap up until it seats at collar flange. Repeat at rear of unit making sure all four legs are adjusted to same height. Legs can be adjusted to overcome an uneven floor.

VENTILATION AND AIR SUPPLY

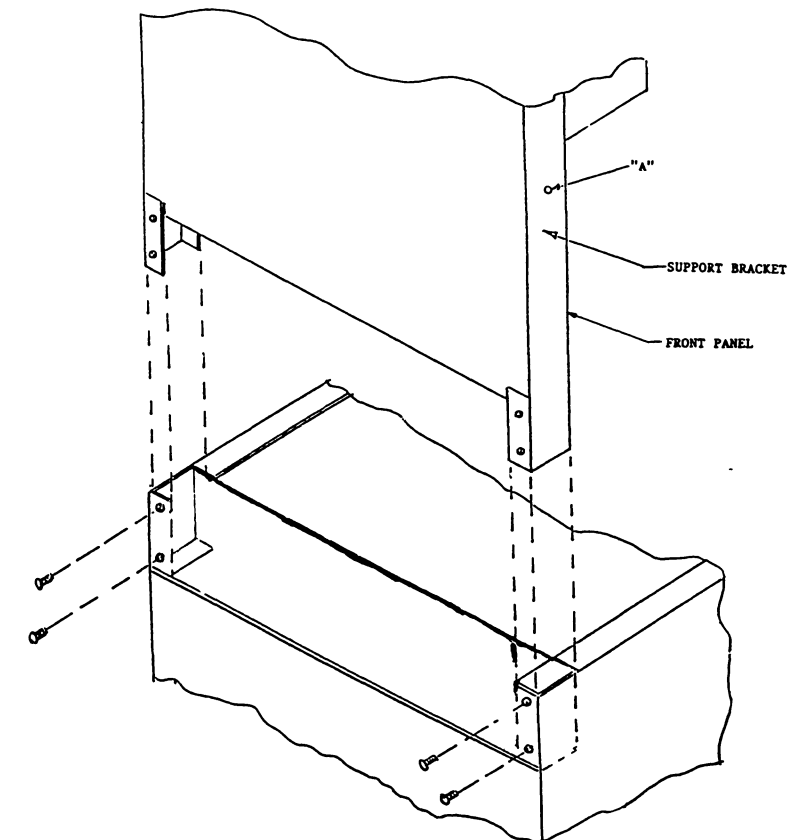
Proper ventilation is highly important for good operation. The ideal method of ventilating a range is the use of a properly designed canopy which should extend six inches (6") beyond all sides of the appliance and six feet (6') six inches (6") from the floor.

A strong exhaust fan will create a vacuum in the room. For an exhaust system vent to work properly, replacement air must enter the room in which the vent is located. The amount of air which enters must equal the amount exhausted.

All gas burners and pilots need sufficient air to operate and large objects should not be placed in front of this oven which would obstruct the air flow through the front.

INSTALLATION INSTRUCTIONS FOR MOUNTING BACKGUARDS, LOW PROFILE BACKGUARDS, SINGLE DECK HIGH-SHELVES, DOUBLE DECK HIGH-SHELVES, SALAMANDERS AND CHEESEMELTERS.

1. Back of range must be easily accessible.
2. Remove the flat head bolt "A" from each side of high-shelf only when placed next to a high-shelf, Salamander or Cheesemelter.
3. Place Backguard, High-Shelf, Salamander or Cheesemelter on the rear of the Range slipping the support brackets into the openings in the burner box sides.
4. Securely fasten support brackets to the burner box sides with (4) 1/4-20 x 3/4 slot truss head machine screws or (4) #10B x 1/2 Phillips sheet metal screws. Hardware package will be supplied.
5. Remove front panel.
6. Replace flat head bolts removed in step 2 so that each high-shelf is bolted it adjacent high-shelf at "A".
7. Replace front panel of High-Shelf, Salamander or Cheesemelter.



1/4 X 20 X 3/4 SLOT TRUSS HEAD M.S. OR #10B X 1/2 PHILLIPS SHEET METAL SCREW

## TESTING

All fittings and pipe connections must be tested for leaks. Use approved gas leak detectors, soap solutions or equivalent, checking over and around the fittings and pipe connections. **DO NOT USE A FLAME!** Accessibility to all gas lines and fittings require that valve panel(s), lower front panel(s), oven rack(s) be removed. It may be necessary to remove or at least raise and securely prop griddles, hot tops and top grates. All parts removed (including fasteners) should be stored safely for re-use.

## TESTING

1. Be sure that all valves and thermostats are in the "OFF" position.
2. Turn on the main gas supply valve. Light all top section pilots.
3. Leak test all valves and fittings as described in the procedure above. Correct any leaks as required and recheck.
4. Light oven pilot.
5. If the range is provided with an oven shut-off valve separate from the thermostat, turn this valve on and set the thermostat at 500 degrees. If the range oven thermostat has an "OFF" position on the dial the thermostat is equipped with an internal, integral oven shut-off valve. Set this thermostat dial to 500 degrees. In both cases, gas will now flow to the oven burner.
6. Leak test all valves, fittings, etc. as above. Correct any leaks and retest.
7. Shut off all range valves and set thermostat dials to "OFF" or low position.

All units are tested and adjusted at the factory. However, burners and pilots should be checked at installation and adjusted if necessary.

**CAUTION:** Gas will flow to top burners even with top pilots out. Gas will not be interrupted. It is the responsibility of the operator to check the ignition of the burners. Should ignition fail after ten (10) seconds, turn burner valve off and wait five (5) minutes and try again.

## OPERATION

### OPEN TOP BURNERS

1. Remove top grates and ring grates.
2. Check flash tubes to see they are properly positioned on burner charge ports.
3. Light pilots.
4. Replace top grates and ring grates.
5. Turn valve completely on. Burner flame should be 1/2" stable blue flame and should impinge on the underside of pot placed on ring grate.

## USER PART LIST

### PART NUMBER

### DESCRIPTION

1028197	Oven Burner
1028299	Oven Pilot Burner Assy. NAT
1028202	Pilot Orifice NAT .018
1028298	Oven Pilot Burner Assy. LP
1028203	Pilot Orifice LP .010
1019418	Thermocouple
1415701	Oven Pilot Safety Valve
1082198	Bell Crank Left
1082199	Bell Crank Right
1082197	Bell Crank Right "RC - Base Only"
1005800	Oven Door Spring
9004700	Adjusting Hook (1/4 - 20 x 5)
9004701	Adjusting Hook (1/4 - 20 x 3 1/8)
1103400	Standard Oven Rack (21" x 26")
1311000	RC Oven Rack
1311100	RC Oven Rack Guide Left
1311101	RC Oven Rack Guide Right
9002200	Space Saver Oven Rack
1671200	RC Oven Blower Motor
9003701	Door Handle End Left
9003700	Door Handle End Right
1589100	Door Handle 30"
1589101	Door Handle 24"
1592000	Door Handle Overlay 30"
1592001	Door Handle Overlay 24"
1089100	ON - OFF Knob
1089101	OVEN Knob
1085999	Oven Valve
1314003	Oven Thermostat Dial
1314116	Oven Thermostat Dial Insert
1017502	Oven Thermostat
1554199	Top Grate
1361601	Ring Grate
1091000	Broiler Ceramic
1360200	Griddle Thermostat
1360201	Griddle Thermostat Dial

GARLAND GAS EQUIPMENT FIELD SERVICE TROUBLE-SHOOTING GUIDE

Service should be performed by a professional as listed in your Maintenance and Repair Center guide.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Burner flame soft-lazy tip yellow	Not enough air mixing with gas.	Open air shutter
Flame lifts off burner ports. Flashes back in burner. Pops excessively when turned off.	Too much air mixing with gas.	Close air shutter.
Delayed ignition.	Unit over gassed or orificed incorrect.	Check gas pressure and orifice size.
Pilot burner will not ignite.	Burner adjusted improperly. Burner ports plugged. Pilot flame too small. Draft in kitchen.	Adjust gas and air mixture. Clean burner ports. Adjust pilot valve. Determine cause.
Flame lifts off pilot orifice.	Pilot over gassed.	Adjust pilot valve.
Oven pilot keeps going out.	Faulty thermocouple or safety valve. Pilot flame too small. Loose connection on safety valve. Main burner blowing out pilot.	Check safety system. Adjust pilot valve. Tighten connection. Adjust gas and air mixture.
Millivolt output low on open circuit test.	Pilot flame too small. Flame yellow - pilot dirty. Thermocouple faulty.	Adjust pilot valve. Clean and adjust pilot. Replace.
Millivolt output high on open circuit test but low on closed circuit test.	Short in magnet.	Replace safety valve.
Millivolt output high on closed circuit test but safety valve will not open.	High millivolt reading on drop out test.	Replace safety valve.
Oven too hot or not enough.	Control out of calibration or bypass improperly set.	Check calibration and set bypass.
Burner flame shuts off when oven gets up to temperature.	By-pass set too low. By-pass set too high causing control to go into snap action.	Adjust by-pass.
Door will not stay closed.	Not enough tension on springs. Springs broken, hinge link broken.	Adjust tension nut clockwise. Replace faulty parts.
Door will not stay open.	Too much tension on springs.	Adjust tension nut counter-clockwise.
Door not closing on one side.	Door warped.	Re-stress door.
Doors not level or low in center of unit.	Trunion support loose. Trunion support worn.	Level and tighten support. Replace.

SHUT DOWN

1. Turn all valves to the "OFF" position.
2. If the unit is to be shut down for an extended period of time, close the in line gas valve.

CAUTION: Should burner ignition fail within 5 seconds, turn burner valve off and repeat step 1. If ignition continues to fail, consult authorized factory service agency.

HOT TOP SECTIONS

1. Raise or remove hot top sections. Every burner has one pilot located at the front right side of the burner.
2. Light pilots. The pilot burner should be adjusted to provide for rapid ignition on the burner.
3. Turn burner valve on. A sharp blue flame should be approximately 1/4" high.
4. Replace hot top sections.

THERMOSTATIC CONTROLLED GRIDDLES - See Griddle Seasoning before use

1. Raise griddle at front and block.
2. Light pilots located at the front right side of each burner.
3. Sensing bulbs must be fully inserted into their individual holders which are located on the underside of the griddle.
4. Set thermostat to maximum, one at a time. Burner should have a 5/16" stable blue flame.
5. Lower griddle carefully into position taking extreme caution not to leave any part of the capillary tube in the burner compartment.

VALVE CONTROLLED GRIDDLES - See Griddle seasoning before use

1. Raise griddle at front and block.
2. Light pilots located at the front right side of each burner.
3. Turn burner valves on to full position. Burners should have 1/2" to a 5/8" stable blue flame.
4. Lower griddle into position.

BROILER GRIDDLE (G283/G282) - See Griddle Seasoning before use

Before turning main gas supply on, make sure all valves are in the off position.

1. Eight (8) ceramics are supplied with each unit. These ceramics are to be placed in the burner section of the broiler before griddle is put into operation.
2. Each burner has 2 lips which will serve as a rest for a pair of ceramics. Two ceramics are positioned with projections pointing down and between each burner. Place a pair to the right of the right burner and a pair to the left of the left burner using side lining ledges as the outside support.
3. Light pilots located in broiler section. Left pilot is a tee, (double pilot) to control left and center burners. Right pilot controls right burner.
4. Turn valves completely on. Burner should have a 5/16" stable blue flame.

**CAUTION:** Gas will flow to top burners even with top pilots out. Gas will not be interrupted. It is the responsibility of the operator to check the ignition of the burners. SHOULD IGNITION FAIL AFTER 10 SECONDS, TURN BURNER VALVE OFF AND WAIT 5 MINUTES AND TRY AGAIN.

ALL UNITS ARE TESTED AND ADJUSTED AT THE FACTORY. HOWEVER, BURNER AND PILOTS SHOULD BE CHECKED AT TIME OF INSTALLATION AND ADJUSTED IF NECESSARY.

OVEN (STANDARD)

A. LIGHTING

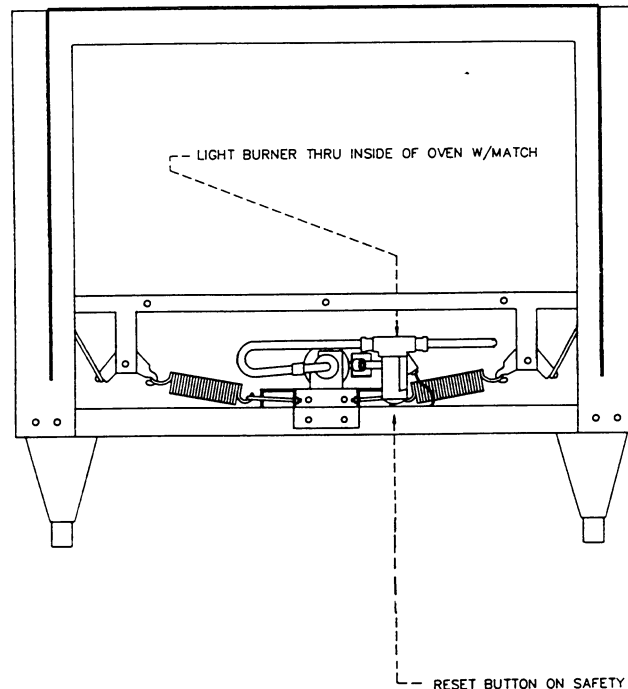
1. Remove oven bottoms.
2. Depress and hold reset button (red) located at the lower front of the oven (beneath the oven door) while lighting the oven pilot. Continue to depress the reset button for 60 seconds. Release button. If pilot does not stay lit, repeat this procedure after 5 minutes.

B. SHUT DOWN

1. Turn all valves and thermostats to the off position.
2. If range is to be shut down for an extended period of time, close the in line gas valve.

C. RELIGHTING

1. Shut all gas valves off.
2. Wait 5 minutes.
3. Repeat lighting instructions in section "A" above.



"RC" BASE OVENS (This section pertains to the forced air unit)

For 115v usage, a cord and plug is provided but connection to the electrical service must comply with local codes; or in the absence of local codes, with the National Electrical Code, ANSI/NFPA No. 70-(current edition).

**WARNING: Electrical Grounding Instructions.**

This appliance is equipped with a three pronged (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-pronged receptacle. Do not cut or remove the grounding prong from this plug.

**POWER FAILURE NOTE:** In the event of a power failure, no attempt should be made to operate this oven. This oven is gas operated but has electrical features, motor and door switches.

If the dial setting does not agree with the test instrument reading within the above limits, recalibrate as follows:

**NOTE:** NO ATTEMPT TO RECALIBRATE THE OVEN CONTROL SHOULD BE MADE WITHIN THE WARRANTY PERIOD. IF THE CONTROL IS OUT +/- 20 DEGREES F. FROM THE DIAL SETTING, THE CONTROL WILL BE REPLACED UNDER WARRANTY. IF SOMEONE ATTEMPTS RECALIBRATION DURING THE WARRANTY PERIOD THERE WILL BE NO WARRANTY ON THE CONTROL THAT WAS TAMPERED WITH.

4. Remove the dial and push out the metal insert.

5. Replace the dial.

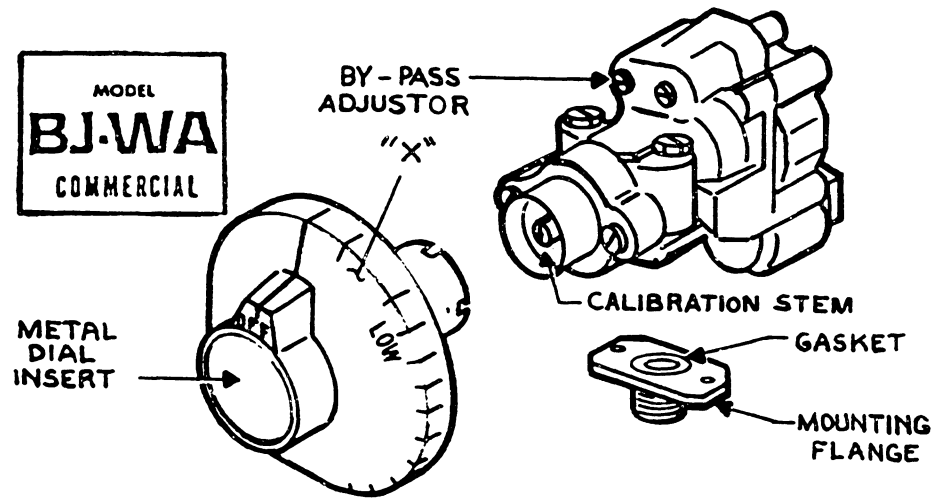
6. Hold dial firmly, insert screwdriver through center of dial, and push calibration stem inward. **DO NOT TURN THIS CALIBRATION STEM!**

7. While holding calibration stem in firm with screw driver, turn the **DIAL** until it is set at the actual temperature as shown by your instrument or thermometer. Release pressure on calibration stem.

8. Replace the dial insert and dial.

9. Set dial to 450 degrees F. (232 degrees C.) mark. Check temperature again, if temperature is not within +/-20 degrees F. of the dial setting it means that the sensing element is inoperative and the control should be replaced.





#### INSTRUCTIONS FOR GRIDDLE CONTROL

When the appliance reaches the temperature at which the dial is set, the control cuts down the flow of gas to the amount required to keep the appliance at that temperature. Always, however, the control must bypass enough gas to keep the entire burner lighted. To maintain this minimum flame, the bypass must be set carefully and accurately as follows:

1. Light the burner, then turn dial "Full On".
2. After 5 minutes, turn dial clockwise to point slightly beyond first mark on dial.
3. Remove dial.
4. With a screw driver, turn bypass adjustor counter-clockwise to increase the flame, clockwise to decrease the flame, until there is a minimum flame over the entire burner.

To check calibration, proceed as follows:

1. Use a Robertshaw Test Instrument with a special disc type thermocouple or reliable "Surface" type thermometer. (NOTE: A drop of oil on the face of the disc will provide better contact.)
2. Turn all griddle temperature controls dials to 400 degrees F. (240 degrees C.). In order to allow temperature to stabilize, the control must be allowed to cycle at least three times before taking a reading.
3. Check temperature reading when control cuts down to bypass by placing sensor firmly on griddle surface, directly above the sensing bulb of control. Reading of test instrument should be between 350 degrees F. (196 degrees C.) and 410 degrees F. (213 degrees C.).

A wiring diagram is attached to the rear of this unit and a copy is included in this manual for your use.

#### A. Lighting Instructions

1. Using the access through the louver panel hold the reset button (RED) located on the oven safety valve. (See prior)
2. Using the access hole located below the louver in the panel, push the RED IGNITOR BUTTON continuously until the oven pilot ignites. (See prior)
3. If the pilot does not stay lit after you release the reset button, wait 5 minutes and repeat Step 2 and hold the reset button approximately 60 seconds.

#### B. Start Up

1. Activate the power switch to cook position.
2. Turn oven valve on.
3. Turn thermostat to desired setting.

#### C. Cool Down

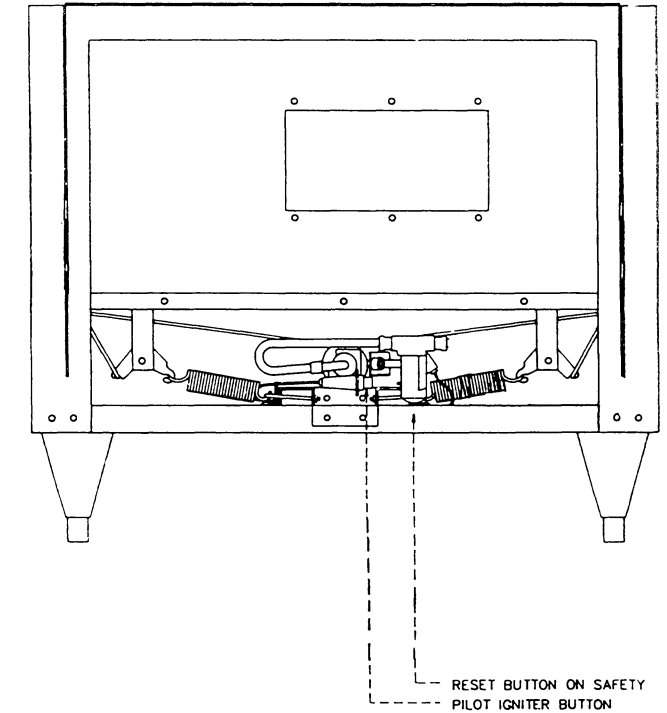
1. Turn thermostat and oven valve off.
2. Open door.
3. Activate power to the cool down position.

#### D. Shut Down

1. Turn thermostat off.
2. Return power switch to "OFF" position.
3. Turn oven valve off.

The motor on your range convection oven is maintenance free since it is constructed with self-lubricating sealed ball bearings. It is designed to provide durable service when treated with ordinary care. We have a few suggestions to follow on the care of your motor.

- A. When the motor is operating, it cools itself internally by air entering the rear of the motor case, provided proper clearance has been allowed.
- B. Since the blower wheel is in the oven cavity it is at the same temperature as the oven. If the motor is stopped while the oven is hot, the heat from the blower wheel is conducted down the shaft and into the armature of the motor. This action could shorten motor life.
- C. We recommend, at the end of the bake or roasting period, when the oven will be idle for any period of time or before shutting down completely, that the doors be left open, and by use of the cool-down position on the fan switch, the fan continues to run for at least 20 minutes. The "FAN" should never be turned "OFF" when the oven is "HOT".



## PRODUCT APPLICATION INFORMATION

### GENERAL INFORMATION

The range is the work horse of the kitchen because of its versatility. Most frequently used in small operations such as cafes, schools, church kitchens, firehouses and small nursing homes where kitchen demands are less taxing.

As a general rule of thumb one 4 to 6 burner range with hot top will be adequate for a 35 to 50 seat restaurant.

The top of the range is designed for flexibility and the preparation of numerous types of products. It may have two or even three different types of tops depending on menu needs. An operation that cooks to order or uses the range primarily for back-up will find open burners more suited to their needs.

Preparation of soups, stocks or sauces are done on a hot top where slow even cooking is desirable. Heating larger quantities of food can be done more efficiently than heating small quantities. Pots and pans should be covered whenever possible to reduce energy consumption.

High acid sauces, such as tomato, should be cooked in stainless steel rather than aluminum since stainless will not react chemically. Light colored sauces such as Alfredo, may be discolored by the use of aluminum especially if stirred with a metal spoon or whip. Salt water shellfish may pit aluminum pots if they are used for frequent preparation.

NOTE: Many parts of the commercial range are raw steel, (Hot tops, griddles, springs, door hooks, etc.) and can react to moisture, forming rust. This occurrence is normal and not considered a factory defect. Clean with a stainless steel or fiber pad. A light coating of salt free oil may be applied.

### OPEN BURNERS

Most traditional use of open burners is for saute or pan frying or for small stock-pot work. Short-term cooking is the most efficient use of the open burner. Heat is concentrated in a small area over the burner. Pans should cover as much of the grate as possible to minimize heat loss. Maximum stock pot size to be used on an open burner is 11" in diameter.

Open burners when not in use should be turned off to save energy. Leaving a flame burning has no advantage since its heat is instantaneous.

### HOT TOPS

Recommended where long term stock pot cooking is required for soups, sauces or stocks. Pots can be placed anywhere on the hot top rather than in one specific position as on an open burner. The maximum stock pot size is 12" in diameter.

Recommended preheat time for a 12" section is 30 minutes. This will thoroughly saturate the metal with heat. Hot tops are evenly heated and have a smooth surface so that pots may be moved easily to any position. Pots must have flat bottoms for maximum contact with the hot surface. Warped pots will not transfer heat evenly thus wasting energy and resulting in uneven cooking patterns.

Roasting pans with straps should never be used on a hot top since only the straps touch the surface and heat transfer will be minimal.

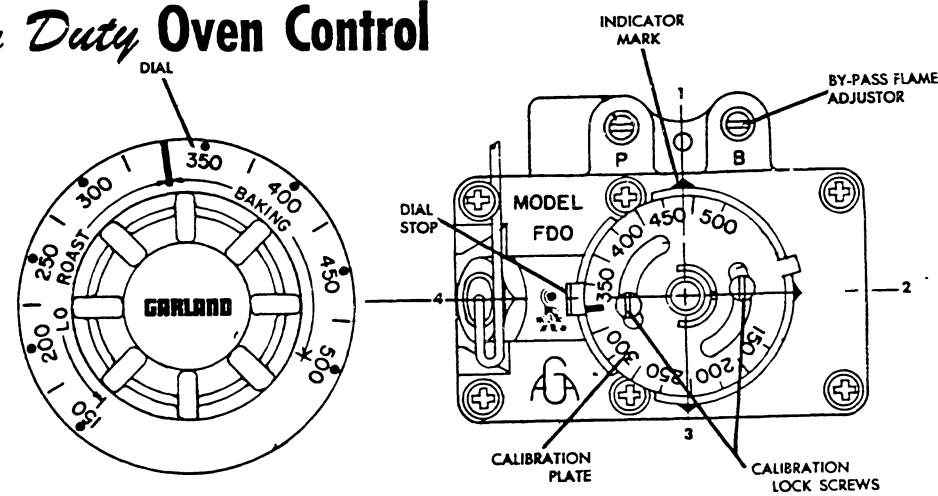
## RECALIBRATION

Field recalibration is seldom necessary, and should not be resorted to unless poor cooking results, definitely proves that the control is not maintaining the temperature to which the dial is set. To check oven temperature when recalibrating use an indicating potentiometer or a reliable mercury oven thermometer.

NOTE: NO ATTEMPT TO RECALIBRATE THE OVEN CONTROL SHOULD BE MADE WITHIN THE WARRANTY PERIOD. IF THE CONTROL IS OUT  $\pm$  20 DEGREES F. FROM THE DIAL SETTING, THE CONTROL WILL BE REPLACED UNDER WARRANTY. IF SOMEONE ATTEMPTS RECALIBRATION DURING THE WARRANTY PERIOD THERE WILL BE NO WARRANTY ON THE CONTROL THAT WAS TAMPERED WITH.

1. Place the thermocouple of test instrument or thermometer in the geometric center of the oven.
2. Light the main burner. Observe which indicator mark aligns with the low stop position of the dial. Use this indicator mark for all settings.
3. Turn dial so 400 degrees F. (240 degrees C.) lines up with the "Low Stop" indicator mark.
4. Allow the oven, or appliance, to heat and thermostat to cycle three times. After sufficient time, check temperature if the temperature does not read within  $\pm$ 20 degrees of the dial setting recalibrate as follows:
5. Pull dial straight off without turning thermostat shaft.
6. Hold calibration plate and loosen the two calibration screws until the plate can be moved independently of the control.
7. Turn calibration plate so that the instrument of thermometer reading is in line with the indicator mark. Hold plate and tighten screws firmly.
8. Replace dial.
9. NOTE: If the above adjustment is prevented by the two loosened calibration lock screws being in contact with the ends of the screw clearance plate to the proper location, reassemble screws in the other tapped holes designed for them.

## Heavy Duty Oven Control



### INSTRUCTIONS FOR MODEL FDO HEAVY DUTY CONTROL

This model FDO is a precision made instrument, carefully set at the factory to accurately control oven temperatures, from 500 degrees F. (260 degrees C.) to 150 degrees F. (66 degrees C.). All adjustments are accessible from front of appliance after removing dial. To remove dial, grasp knob portion and pull straight out.

1. With oven cold, turn dial counter-clockwise slowly from "Low Stop", until bypass seat just snaps on.
2. Remove dial.
3. With a screw driver, turn bypass flame adjuster screw counter-clockwise to increase the bypass flame or clockwise to decrease the entire burner flame to a minimum stable flame.
4. Replace dial. CAUTION: While making this adjustment, if the oven should become heated while the dial is set at a low range below 350 degrees F. (177 degrees C.), the bypass flame will shut off completely. If this occurs, turn dial counter-clockwise slowly until bypass gas snaps on. Then check bypass adjustment as stated.

During slow times, group pots on one 12" section and turn off the other section. This will conserve energy. If needed, the other section will preheat in 10 to 15 minutes due to the retained heat in the metal.

### GRIDDLE TOPS

Griddle tops are designed to have food cooked directly on the surface, for example, hamburgers, eggs, pancakes, hash browns. Do not put pots or pans on the griddle surface. This will scratch or nick the surface and result in improper cooking or sticking of product. Never salt food over a griddle since this builds up a gummy residue making it difficult to clean.

Avoid hitting the surface with the edge of a spatula since this will cause nicks. Most frequent used temperatures are 325 to 350 degrees F.

Check the grease drawer to drain frequently during heavy use to prevent overflowing. Over a period of time, a slight discoloration of the griddle top will occur. This will not effect the cooking performances. For best results, keep the griddle surface clean and shiny.

For further GRIDDLE INFORMATION please refer to "Maintenance - Griddle Seasoning and Cleaning."

### RANGE BASE CONVECTION OVEN

As a guide, set oven temperature 25 to 50 degrees lower than called for in recipes directions using standard or conventional ovens. Cooking time may be less depending upon the product you are preparing. 2% to 5% is a general rule. Product should be watched the first time it is prepared. Cooking time and oven temperature will vary depending upon such factors as size of load, temperature of product, and mixture of recipe, particularly moisture. When you have established satisfactory time and temperature for our products, record them on a chart and keep as a reference guide.

Preheat oven thoroughly before use. To reach 350 degrees F takes approximately 15 minutes. For optimum results oven should be preheated for 30 minutes to allow for thorough heat saturation.

The load should be centered on the oven racks to allow for proper heat circulation around the sides. Load size - the oven will hold three (3) 18" x 26" sheet pans, six (6) 12" x 20" x 2.5" steam table pans or one (1) 17.75" x 25.75" roast pan. Never place pans directly on the oven bottom. Always use the lowest rack position which will allow the air to circulate within the oven cavity. Load and unload food as quickly as possible to prevent an excessive drop in temperature. Avoid using warped pans since level pans bake more evenly. Do not use a deep pan for shallow cakes, cookies, etc. as circulation across the surface is essential for even cooking and browning. To prevent excessive shrinkage, roast meats at a low temperature (250 to 325 degrees F.)

When rethermalizing frozen products, preheat the oven 50 degrees higher than cooking temperature to compensate for heat loss during and after loading. Thermostat must be returned to cooking temperature after loading.

To conserve energy, turn the oven off when not in use. If you cover your pans with aluminum foil be sure to crimp it tightly around the edges to prevent the foil from blowing off. Any foreign objects, i.e. food, foil, ect., which become lodged in the fan must be removed as soon as the oven is cool.

PROBLEM/SOLUTION - RESTAURANT RANGE CONVECTION OVEN

- If cakes are dark on the sides and not done in the center.....Lower oven temperature
- If cake edges are too brown.....Reduce number of pans or lower temperature.
- If cakes have light outer color.....Raise temperature.
- If cake settles slightly in the center.....Bake longer or raise oven temperature slightly. Do not open doors too oven for long periods.
- If cake ripples.....Overloading pans or batter is too thin.
- If cakes are too coarse.....Lower oven temperature.
- If pies have uneven color.....Reduce number of pies per rack or eliminate use of bake pans.
- If cupcakes crack on top.....Lower oven temperature.
- If meats are browned and not done in the center.....Lower oven temperature and roast longer.
- If meats are well done and not browned.....Raise temperature. Limit amount of moisture.
- If meats develop hard crust.....Reduce temperature or place pan of water in oven.

2. Burner Gas/Air Adjustments

Variations in field conditions, rough handling of the equipment in transit may indicate the need for adjustment of primary air to the burners. Check operation and adjust as below to provide a sharp blue flame at full rate (open valve fully so that the thermostat is calling for maximum gas flow). On the burner (star, "H" griddle, broiler, oven burners) locate the air shutter. Loosen the lock-nut so that the air shutter turns freely. Reinstall burner. Turn on gas flow and ignite burner. Rotate air shutter to obtain the following:

- a. Open (Star) Burner = 1/2" stable, sharp inner blue cones.
- b. Hot tops, griddles = 5/16" stable, sharp inner blue cones.
- c. Oven burners, if the burner flames are soft and unstable or show yellow tipping increase the amount of air by opening the air shutter.

If the burner flames are sharp but lift off the burner ports, reduce the amount of primary air by closing the air shutter.

NOTE: The rates shown in the chart on the Index Page (2) are maximum rates and must not be exceeded.

AUTOMATIC PILOT VALVE

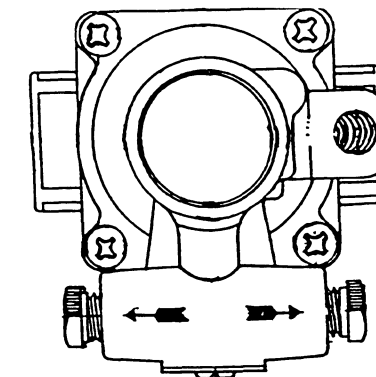
The automatic pilot valve is a protective device which allows gas to flow to the oven burner only when the pilot burner is burning. (This is used on GARLAND ranges has safe lighting provisions provided by the flow interrupter which will not allow gas to flow to the oven burner while the red button is depressed.)

A too loose or too tight connection of the thermocouple nut to the automatic pilot valve can prevent the thermocouple from activating the valve. It should be drawn up finger tight and the TIGHTENED ONLY 1/4 TURN WITH A WRENCH.

It is recommended that an automatic pilot test kit be used to check the thermocouple and the hood assembly of the safety valve. A visual examination of the thermocouple lead should be made to make sure that there are not cracks or ruptures.

Every effort has been made to insure trouble-free performance of this system with a minimum of service.

AUTOMATIC PILOT VALVE



## OPEN TOP BURNERS

Cleaning of the range top burner is a simple procedure, and, if done at regular intervals will prolong the life of the range and ensure good flame characteristics.

- Wipe any spills as they occur.
- Grids and trays should be removed daily, washed, rinsed and dried thoroughly.
- Use a wire brush to clean the ports in the burners. Ignite and check for clogged holes.
- If any clogged holes are apparent, the burner should be lifted out and brushed inside and out with a small venturi brush. Each port on the burner itself should be cleaned with a properly sized wire or thumb drill. Wash with soap and hot water if grease is observed on the burners. Dry thoroughly.
- Reinstall and check the flame pattern. Readjust the air shutter if necessary.
- If a yellow flame appears around the edges instead of being uniformly blue, it is usually a sign of grease and dirt in the throat of the burner. Remove and clean the burner and readjust the air shutter.
- The most common problem with open burner ranges is spillage. Once the burner ports are partially plugged with food, the air-to-gas mixture is disturbed and results in an inefficient burner.

## HOT TOPS

While the surface is still slightly warm, wipe down with a clean burlap cloth. Burnt on spillage should be scraped off. If necessary, remove the plate and wash in a sink with soap and hot water. Dry thoroughly. In damp climates, wipe down with a light coating of oil to prevent rusting. Avoid excessive use of water as this could damage the surface and the controls below.

**NOTE:** Steel griddle surface will tone (blue discoloration) from heat. This toning will not diminish function or operation and is not a defect.

## ADJUSTMENTS

The top and oven orifices are fixed and cannot be adjusted. Proper rate is attained if the gas supply pressure is adequate. Pressure may be checked by using the 1/8" N.P.T manifold pressure tap. A properly adjusted air shutter will provide for a distinct blue flame over the entire port area of the burners when at full rate.

### 1. Pilot Adjustment

All pilot adjustment valves are mounted on the range top manifold.

- a. If required the open burner pilot should be adjusted so that the tip of the pilot flame reached the middle of the flash tube opening. This flame may show a slight yellow tip.
- b. The pilot burner for the griddle or hot top burner should provide for rapid ignition of the burner but should not impinge on any part of the burner. When properly adjusted it should neither lift off the burner nor should it show a yellow tip.

## MAINTENANCE

We suggest maintenance and repairs to be performed by an GARLAND AUTHORIZED SERVICE AGENT. The listing provided with your range is titled "Maintenance and Repair Centers."

## PAINTED FINISHES

Establish a regular cleaning schedule. Any spills should be wiped off immediately.

The oven should be permitted to cool down before cleaning exterior surfaces.

1. Wipe exposed, cleanable surface when cool with a mild detergent and hot water. Stubborn residue spots may be removed with a light weight non metallic scouring pad. Dry thoroughly with a clean cloth.
2. Stainless steel should be cleaned using a mild detergent, a soft cloth and hot water. If necessary to use a nonmetallic scouring pad, always rub in the direction of the grain in the metal to prevent scratching. Use a water based stainless cleaner (Drackett Twinkle), if you want a high shine.

## STAINLESS STEEL

For routine cleaning just wash with a hot water and detergent solution. Wash just a small area at a time or the water will evaporate leaving the chemicals behind causing streaking.

Rinse the washed area with a clean sponge dipped in a sanitizing solution and wipe dry with a soft clean cloth before it can dry.

Use a paste (of water and a mild scouring powder) if you have to, but never rub against the grain. All stainless steel has been polished in one direction. Rub with the polish lines to preserve the original finish. Then thoroughly rinse as before.

To prevent fingerprints there are several stainless steel polishes on the market that leave an oily or waxy film. Do not use on surfaces that will be in contact with food.

Stainless steel may discolor if overheated. These stains can usually be removed by vigorous rubbing with a scouring powder paste.

Use only stainless steel, wood or plastic tools if necessary to scrape off heavy deposits of grease and oil. Do not use ordinary steel scrapers or knives as particles of the iron may become imbedded and rust. **STEEL WOOL SHOULD NEVER BE USED.**

Either a typical bleach solution or hot water can be used to sanitize stainless steel with out harm.

#### OVEN INTERIOR (Porcelain Enamel)

**NOTE:** Disconnect line cord (if applicable) from power supply before cleaning or servicing.

1. Before cleaning oven interior, remove all oven racks and guides (if "RC" base). Oven racks and guides can be cleaned with a mild soap and warm water or run through dish washer.
2. The porcelain interior can be cleaned with oven cleaners such as "Easy-Off", or "Dow Oven Cleaner". Follow product manufacture's instructions for proper use.

#### OVEN INTERIOR - OPTIONAL CONTINUOUS CLEAN

**NOTE:** Disconnect line cord (if applicable) from power supply before cleaning or servicing.

1. "Break-In Period" - When the oven is new, operate the oven for at least two hours at high heat, with the oven empty, before normal cooking operation. Continue preheating the oven for two hours prior to use during the first two weeks. During this break-in period, it is important that the oven surfaces be kept clean of excessive soiling due to spillage.
2. How to put "continuous cleaning" action to work: Each day, after baking and roasting operations have ceased, empty the oven, turn the temperature control up to high heat (500 degrees). This high heat will accelerate the cleaning action and reduce the time required to effectively clean the oven. Usually the cleaning operation will take about 45 to 60 minutes.
3. Heavy Staining - When the oven appears soiled, due to heavy staining, we suggest pre-heating the empty oven each day for 1 or 2 hours (depending on the condition of the oven) for effective results. Also, ordinary household ammonia has proven to be effective in removing baked-on "soil" build-up, and has the beneficial effect of keeping the microscopic "pores" of the coating open and free to perform its cleaning action. An occasional light swabbing with household ammonia while the oven is at room temperature will prove extremely beneficial.

**WARNING - Abrasives and Oven Cleaners should not be used** - in order to maintain continuous cleaning action, it is very important to avoid the use of abrasive materials such as steel wool scouring pads, abrasives or sharp implements which can cause permanent damage to the surface coating. In addition, oven cleaners such as "Easy-Off" or "Dow Oven Cleaner" will clog the "PORES" of the special coating and will retard the cleaning action.

4. High temperature cleaning causes grease and food residue to be reduced to a fine powder. After oven has cooled, the powder should be brushed from the oven cavity.
5. Period "Tune-Up" - Although the oven appears clean, we recommend operating the oven at high heat for 2 hours approximately once each month. This will insure against build-up of solids in the pores of the coating.

#### GRIDDLE SEASONING

- A. Remove all factory applied protective material by washing with hot water, mild detergent or soap solution.
- B. Apply a thin coat of cooking oil to the griddle surface, about one ounce per square inch of griddle surface. Spread over the entire griddle surface with a cloth to create a thin film. Wipe off any excess oil with a cloth.
- C. Light all burners, set a lowest possible setting. Some discoloration will occur when heat is applied to steel.
- D. Heat the griddle slowly for 15 to 20 minutes. Then wipe away oil. Repeat the procedure 2 to 3 times until the griddle has a slick, mirror like finish. Do this until you have reached the desired cooking temperature.

**IMPORTANT:** Do not attain high (on valve control) or 450 degrees (on thermostat control) during "break-in" period.

**NOTE:** Steel griddle surface will tone (blue discoloration) from heat. This toning will not diminish function or operation and is not a defect.

The griddle will not require reseasoning if it is used properly. If the griddle is over heated and product begins to stick to the surface it may be necessary to repeat the seasoning process again. If the griddle is cleaned with soap and water it will be necessary to reseason the griddle surface again.

#### GRIDDLE CLEANING

To produce evenly cooked, perfectly browned griddle products, keep griddle free from carbonized grease. Carbonized grease on the surface hinders the transfer of heat from the griddle surface to food product. This results in uneven browning and loss of cooking efficiency, and worst of all, carbonized grease tends to cling to the griddle foods, giving them a highly unsatisfactory and unappetizing appearance. To keep the griddle clean and operating at peak performance, follow these simple instructions:

- A. AFTER EACH USE clean griddle thoroughly with a grill scraper or spatula. Wipe off any excess debris left from cooking process.
- B. ONCE A DAY clean griddle surface with a grill brick and grill pad. Remove grease container and clean thoroughly, in same manor as any ordinary cooking utensil.
- C. ONCE A WEEK clean griddle surface thoroughly. If necessary, use a grill stone or grill pad over the griddle surface. Rub with grain of the metal while still warm. A detergent may be used on the plate surface to help clean it, but care must be taken to be sure it is thoroughly removed. After removal of detergent, the surface of the plate should be covered with a thin film of oil to prevent rusting. To remove discolorations, use a non-abrasive cleaner. Before re-using the griddle must be reseasoned. Keep griddle drain tube to grease container clear at all times on those models without side grease container.

**CAUTION:** This griddle plate is steel, but the surface is relatively soft and can be scored or dented by careless use of spatula. Be careful not to dent, scratch, or gouge the plate surface. This will cause food to stick in those areas. Also, note, since this is a steel griddle if a light coating of oil is not always present rust will develop on unexposed areas.